CITY OF MOUNTAIN VIEW

Fire Department ▪ Fire and Environmental Protection Division ▪ 500 Castro Street ▪ City Hall - 4th Floor
Mountain View, California 94041-2010 ▪ 650-903-6378 ▪ FAX 650-903-6101

Plan Check Requirements for:
INTERIOR/EXTERIOR ABOVEGROUND CLASS III-B TANKS
(includes waste oil)
(Updated 2/1/07)

The Fire and Environmental Protection Division of the Mountain View Fire Department (650-903-6378) will review your submitted plans using this plan check guideline.

In the spaces provided, enter the page number in your submitted plans where the item is called out and highlight the item in your plans. Include brochures or manufacturer's cut sheets with the plans when asked for.

If all the required information asked for is included in your plans or attachments, they can be reviewed and approved by the Fire and Environmental Protection Division as quickly as five working days.

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Facility Name: _____ Address: _____

Architect Name: _____ Phone: _____ PC #:_____Date:_____

I. **Plan Checking**

A. An Environmental Compliance Plan (ECP) must submitted or updated for these tank(s).

II. **Minimum Requirements**

A. General

1) The tank shall be listed by a nationally recognized association (i.e. UL, FM etc.) (CFC 7902.1.8.2.1)
Attach manufacturer's cut sheets of the tank, including the listing by a nationally recognized association.

B. Tank Location

1) Exterior tank(s) shall be located as follows (7902.2.2.6):

When the tank(s) are located within the diked area or drainage path for a Class I or II liquid:

TYPE OF TANK	PROTECTION	MINIMUM DISTANCE FROM PROPERTY LINE OF PROPERTY WHICH IS OR CAN BE BUILT UPON, INCLUDING THE OPPOSITE SIDE OF A PUBLIC WA	MINIMUM DISTANCE FROM NEAREST SIDE OF ANY PUBLIC WAY OR FROM NEAREST IMPORTANT BUILDING ON THE SAME PROPERTY
Floating Roof	Protection for exposures(1)	1/2 times the diameter of the tank	1/6 times the diameter of the tank
	None	Diameter of tank, but need not exceed 175'	1/6 times the diameter of the tank
Vertical tank with weak roof-to-shell seam	Approved foam or inerting system on tanks not exceeding 150' in diameter	1/2 times the diameter of the tank	1/6 times the diameter of the tank
	Protection for exposures(1)	Diameter of the tank	1/3 times the diameter of the tank
	None	2 times the diameter of the tank but need not exceed 350'	1/3 times the diameter of the tank
Horizontal and vertical tank with emergency relief venting to limit pressures to 2.5 psig	Approved foam or inerting system on tanks not exceeding 150' in diameter	≤ 275 gallon capacity: 2.5' 276 to 750 gallon capacity: 5' 751 to 12,000 gallon capacity: 7.5' 12,001 to 30,000 gallon capacity: 10'	≤ 275 gallon capacity: 2.5' 276 to 750 gallon capacity: 2.5' 751 to 12,000 gallon capacity: 2.5' 12,001 to 30,000 gallon capacity: 2.5'
	Protection for exposures (1)	≤ 275 gallon capacity: 5' 276 to 750 gallon capacity: 10' 751 to 12,000 gallon capacity: 15' 12,001 to 30,000 gallon capacity: 20'	≤ 275 gallon capacity: 5' 276 to 750 gallon capacity: 5' 751 to 12,000 gallon capacity: 5' 12,001 to 30,000 gallon capacity: 5'
	None	≤ 275 gallon capacity: 10' 276 to 750 gallon capacity: 20' 751 to 12,000 gallon capacity: 30' 12,001 to 30,000 gallon capacity: 40'	≤ 275 gallon capacity: 5' 276 to 750 gallon capacity: 5' 751 to 12,000 gallon capacity: 5' 12,001 to 30,000 gallon capacity: 5'

(1) Protection for exposure is protection by a public fire department or private fire brigade capable of providing cooling water streams on structures on property adjacent to liquid storage.

When the tank(s) are NOT within the diked area or drainage path for a Class I or II liquid:

TANK CAPACITY	MINIMUM DISTANCE FROM PROPERTY LINE OF PROPERTY WHICH IS OR CAN B BUILT UPON, INCLUDING THE OPPOSITE SIDE OF A PUBLIC WAY	MINIMUM DISTANCE FROM NEAREST SIDE OF ANY PUBLIC WAY OR FROM NEAREST IMPORTANT BUILDING ON THE SAME PROPERTY
12,000 gallons or less	5'	5'
12,001 to 30,000 gallons	10'	5'

Indicate on the plans the appropriate distances between tank, property lines, and public ways.
Plan page number:____

C. Supports, Foundations and Anchoring

1) Tanks located at grade shall rest on the ground or on foundations made of concrete, masonry, piling or steel. Tank foundations shall be designed to minimize the possibility of uneven settling of the tank and to minimize corrosion in any part of the tank resting on the foundation. (CFC 7902.1.16.2) Indicate the type of foundation design on the plans. Plan page number: _____

2) Tanks located above grade shall be securely supported. (CFC 7902.1.16.3). *Indicate the type of supports on the plans.* Plan page number: _____

3) Tank supports and connections shall be designed to resist damage as a result of seismic activity in accordance with the Building Code. (CFC 7902.1.12) *Indicate the type of seismic securement for the tank and generator on the plans.* Plan page number: _____

D. Connections

1) Piping, valves, fittings and related components shall be in accordance with nationally recognized engineering standards, be listed for the application or be approved by the chief. (CFC 7901.11.1.1) *Attach manufacturer's cut sheets on all piping, valves and fittings.*

2) Piping systems (if used) shall contain a sufficient number of manual control valves and check valves to operate the system properly and protect the plant under normal and emergency conditions. Piping systems and pumps shall contain a sufficient number of such valves to properly control the flow of liquid in normal operation and in the event of physical damage or fire exposure. (CFC 7901.11.4) *Show the control valves and pumps to be used in an emergency on the plans.* Plan page number: _____

3) Piping systems (if used) shall be substantially supported and protected against physical damage and excessive stresses arising from settlement, vibration, expansion or contraction , or exposure to fire. (CFC 7901.11.6) *Show the support and protection for the piping system on the plans.* Plan page number: _____

4) Vent diameter opening shall be at least the size of the fill/withdrawal opening, or at a minimum 1 1/4 inch, whichever is greater (CFC 7902.1.13.8.1). *Indicate the vent diameter on the plans.* Plan page number:____

5) Tank(s) shall be equipped with an emergency relief valve which will not allow internal pressure to exceed 2.5 psi. (Note: NOT required for exterior tank(s) exceeding 12,000 gallon capacity which are not located within the diked area of the drainage path of Class I or II liquids. (CFC 7902.2.6.1) *Attach manufacturer's cut sheets of the pressure relief valve. Indicate the location of the pressure relief valve on the plans.* Plan page number: _____.

6) Overspill containers of non-combustible material shall be fixed to the tank fill pipe and have a capacity of not less than 5 gallons. {MVCC 24.3.0 (n)} *Indicate the location and size of the overspill box, if applicable, on the plans.* Plan page number: _____

7) Overspill containers shall be equipped with a manual drain valve which drains into the primary tank {MVCC 24.3.0 (n)}. *Indicate this on the plans.* Plan page number: _____

8) For exterior top-loaded tanks, metallic fill pipes shall be designed and installed to minimize the generationof static electricity by terminating the pipe within 6" of the tank bottom. (CFC 7902.2.7.2) *Indicate the fill pipe and show its distance from the tank bottom.* Plan page number: _____.

9) Tank(s) shall be equipped with a limit-level (overfill) control which will prevent overfilling of the tank. Alimit-level control may include visual observation when the level of liquid in the tank is within sight of the operator and the filling device is within his immediate control {MVCC 24.3.0(n).} *Indicate on the plans how the tank will be filled and the type of limit-level control to be used. If an electronic high-level sensor is used, attach manufacturer's cut sheets on the sensor and indicate the location of the alarm panel on the plans.* Plan page number: _____

10) Tank connections located below normal liquid level shall be provided with internal or external controlvalves as close as practical to the shell of the tank. Such valves, when external, and their connections to the tank, shall be of steel (CFC 7901.11.5). *Indicate any connections to the tank below normal liquid level and control valves, if applicable.* Plan page number: _____

11) Low melting point materials, such as aluminum, copper and brass; materials which soften on fire exposure, such as nonmetallic materials; or nonconductile materials such as cast iron used underground shall be within their pressure and temperature limitations. When such materials are used they shall be either:
    a. Suitably protected from fire exposure,
    b. Located such that leakage resulting from failure would not unduly expose persons, buildings or structures, or
    c. Located where leakage can readily be controlled by operation of accessible remotely located valves(CFC 7901.11.1.2).

Indicate whether any low melt-point materials will be used, if so which ones, and how they will meet the above criteria. Plan page number: _____.

E. Secondary Containment

1) The tank(s) and piping (if any) shall be provided with secondary containment capable of holding 110% of the largest single tank or 10% of the total aggregate volume of all tanks (whichever is greater) plus the volume of a 24-hour rainfall as determined by a 25-year storm history if open to rainfall. (MVCC 24.3.0(q), CFC 7901.8.4) *Indicate the type of secondary containment for the tank(s) and piping on the plans.* Plan page number: _____

2) If concrete berms or diked areas will be used for secondary containment, the concrete shall be coated with material that will not degrade with exposure to the tank products. *Provide manufacturer's cut sheets on the coating to be used which indicates its compatibility with the stored products.*

3) When diked areas are used, walls shall be restricted to an average height of 6 feet above the interior grade. (CFC 7902.2.8.4.3) *Indicate the wall height on the plans.* Plan page number: _____.

4) When diked areas are used, the minimum distance between tanks and the toe of the interior dike walls shall be 5 feet. (CFC 7902.2.8.4.3) *Indicate these distances on the plans.* Plan page number: _____.

5) When diked areas are used for two or more exterior tanks, the diked area shall be subdivided by drainage channels leading to an impounding basin or by intermediate curbs or spill dikes in order to prevent spills from endangering adjacent tanks within the diked area. Intermediate curbs and spill dikes shall not be less than 18" in height. (CFC 7902.2.8.4.4) *Indicate the subdivisions and their dimensions on the plans.* Plan page number: _____.

6) Piping shall not pass through adjacent dikes areas or impounding basins, unless provided with a sealed sleeve or otherwise protected from exposure to fire. (CFC 7902.2.8.4.5) Indicate on the plans how this requirement will be addressed. Plan page number: _____.

7) Monitoring of the secondary containment of the tank shall be visual if possible or electronic. If electronic monitoring is used, the device shall be connected to an attention attracting visual and audible alarm. A weekly log shall be kept at all times documenting tank inspection {MVCC 24.3.0 (m)}. *Indicate the form of monitoring and location of the alarm, if applicable, on the plans.* Plan page number: _____.

F. Miscellaneous

1) The tank(s) shall be labeled with the product name and appropriate NFPA 704M placard. (MVCC 24.3.9) *Indicate this on the plans.* Plan page number: _____

2) At least one 40:B-C portable fire extinguisher shall be provided near and within visual sight of the tank(s). (CFC Standard 10-1) *Indicate the size and location of the fire extinguishers on the plans.* Plan page number: _____

3) Guard posts or other approved means shall be provided to protect storage tank and connecting piping, valves and fittings; and use areas subject to vehicular damage. When guard post are required, the posts shall meet the following criteria:
   a. Constructed of steel not less than four (4) inches in diameter and concrete-filled;
   b. Spaced not more than four (4) feet apart on center;
   c. Set not less than three (3) feet deep in a concrete footing not less than fifteen (15) inch diameter;
   d. Set with the top of the post not less than three (3) feet above the ground; and
   e. Located not less than five (5) feet from the tank. {MVCC 24.3.0 (o)}

If the tank or generator is exposed to vehicular traffic, indicate the items listed above.
Plan page number: _____.

4) The tank storage area shall be secure against unauthorized entry and safeguarded with such protective facilities as the public requires. (CFC 8001.11.2) *Indicate on the plans how the tank will be secured and protected.* Plan page number: _____

5) Electrical wiring and equipment shall be installed in accordance with the Electrical code. (CFC 8001.11.4) *Indicate on the plans the type and class of electrical wiring.* Plan page number: _____.

6) Monitoring of the secondary containment of the tank shall be visual if possible or electronic. If electronic monitoring is used, the device shall be connected to an attention attracting visual and audible alarm. A weekly log shall be kept at all time documenting tank inspection. {MVCC 24.3.0 (m)} *Indicate the form of monitoring and location of the alarm, if applicable, on the plans.* Plan page number: _____.

7) Prior to being placed in service, the tank and associated piping, shall be tested in accordance with nationally recognized standards. The testing shall be witnessed by the Mountain View Fire Department (CFC 7902.1.11) *Indicate how the tank and piping will be tested.*
Plan page number: _____.